Methods: We prospectively included patients admitted to our department for acute HF or exacerbation of chronic HF between December 2010 and May 2011. We excluded patients over 80 years old, those with severe renal failure (GFR < 50ml/min/1.73 m2) or severe worsening of renal function during hospitalization and patients having dysthyroidism or under immunosuppressive therapy. A dosage of plasmatic cystatin C concentration was done using particule-enhanced turbidimetric immunoassay method. The main endpoint was death at a 120 days follow up.
Results: Sixty four patients were enrolled, aged 62.2 ± 11.4 years, with a sex ratio of 1.56. Patients were at NYHA class III or IV at admission in 87% of cases, with an ischemic etiology in 55% of cases. LVEF was 51.7 ± 13.8% and GFR was 76 ± 19.8 ml/min. Mean cystatin C was 1.42 ± 0.37 mg/l. During follow-up, 10 (15.6%) patients died. Higher levels of Cystatin C (third tertile) were associated with a significant increase in mortality rate with an RR of 8 when moving from the first to the third tertile and a RR of 3 when moving from the second to the third (p=0.033). Prognostic value is uncertain for milder elevations between the first and second tertiles (p=0.45).
Conclusion: A high level of Cystatin C at admission is a strong predictor of 120-days mortality among patients with HF. Discriminative value falls for milder elevations.

CRT-120

Neointimal Contractility Inside Of Stent: IVUS Observation In a Porcine Coronary Model

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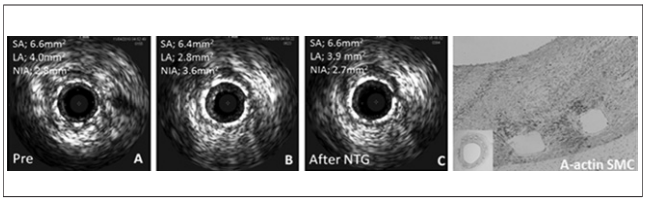
Aims: QCA after intracoronary Acetylcholine (Ach) infusion is used to evaluate of coronary vasomotor dysfunction following stent implantation, which diameter changes of non-stented segment was observed. In this case study, IVUS was utilized to analyze the vasomotion within stented segment in a porcine coronary artery model.
Methods and Results: Everolimus-eluting stent (3.0x18mm) was implanted to RCA with S/A of 1.1:1. At 28d, vasomotion was assessed by infusion of Ach 10-6 M/ml 3 min followed by NTG 200μg. An IVUS catheter was inserted to the mid of the stented segment without pullback. IVUS imaging was recorded before, during Ach infusion, as well as after NTG infusion. Finally, the animal was terminated for histology and immunhistochemistry.

Angiographically, the RCA was widely patent with TIMI III flow post stent implantation and at follow-up. Neointimal contraction and relaxation in response to Ach and NTG were demonstrated by IVUS (Figures), which measured by the changes of neointimal hyperplasia area (NIA), as well as luminal area (LA). The maximal NIA inside of the stent was 1.3 fold increasing from its baseline level during Ach infusion. In counter to increasing of neointimal area, the minimal LA was reduced 30%. Following NTG injection, the NIA was returned to baseline level. The stent area (SA) from IVUS was consistent during this provocative test. Histology demonstrated fibrocellular neointimal formation in the stented vessel segment. Immunohistochemistry for α-actin showed positive smooth muscle cell staining in the neointima.
Conclusions: This is the first report using IVUS to observe vasomotion within stented segment in porcine model at 28d. Our results showed that the neointima in the stented segment had contractility in response to Ach challenge. Scaffolding by metal stent plays a role to compromise the consequence of vessel spasm.



CRT-121

Effectiveness Of Implementing A Therapeutic Hypothermia Protocol In Cardiac Arrest Patients: A Singapore Tertiary Center Experience

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Introduction: Out of hospital cardiac arrest (OHCA) is a major cause of unexpected deaths in Singapore with an OHCA survival-to-hospital-discharge rate of 2%. Therapeutic hypothermia is strongly recommended for comatose OHCA survivors. Despite this, worldwide implementation of therapeutic hypothermia has been slow.
Aims: We aim to evaluate the effectiveness of protocolizing therapeutic hypothermia in a large tertiary hospital and to describe the outcomes of OHCA following its implementation.
Methods: We evaluated 964 OHCA patients who presented to the Emergency Department from April 2010 to July 2012. A protocol for therapeutic hypothermia was implemented in June 2011. Data on patients' demographics, initial rhythm of arrest, site of care, institution of therapeutic hypothermia, and neurological outcome on discharge were collected.
Results: From April 2010 to July 2012, 964 OHCA patients presented to the Emergency Department and 160 patients survived to admission. The overall OHCA survival-to-hospital-discharge rate was 3.4%; this rate was 2.0% in the first year and 5.1% in the year following the implementation of a protocol (p value = 0.014).

Younger age (odds ratio=0.66 per 10 years, p=0.003) and a presenting rhythm of ventricular fibrillation/tachycardia (odds ratio=7.13, p≤0.001) were strong predictors of survival to discharge.

The overall rate of implementation of therapeutic hypothermia was 25.8%. Prior to the implementation of a protocol in June 2011, only 8.8% of patients who survived to admission had therapeutic hypothermia. This rate increased significantly to 35.7% in the year following the implementation of a protocol (p value≤0.001).

A greater proportion of the patients in the hypothermia group were discharged with good neurological outcome (15% versus 7.8%, p value = 0.217), although the result was not statistically significant.
Conclusion: The presence of a protocol led to increasing use of therapeutic hypothermia for comatose OHCA patients in our intensive care units and may have contributed to an improvement in the outcomes of OHCA patients.

Thrombosis

CRT-122

Pretreatment of Synthetic Vascular Grafts With Heparin Before Implantation, A Simple Technique To Reduce The Risk of Thrombosis

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Background: Synthetic grafts are being widely used to bypass occluded vessels or to supply blood flow. Thrombosis of these grafts is a major complication. The clots are often formed during the first exposure of blood to the graft surface which later become a nidus for larger clots. We examined whether pretreatment of the graft with heparin prevents this initial clotting process.
Methods: A circuit was assembled to compare two sets of shunts in the same subject. This circuit simulated a systemic-pulmonary shunt with inflow cannula in the aorta, branching to 2 groups of study and control grafts, connected to an outflow cannula in the pulmonary artery. The study group was treated with heparin for 15 minutes prior to placement in the circuit. With installation of the circuit, the blood flowed from the aorta to a set of multiple branches all the same size and properties with the only difference being exposure to heparin.

Pressure was monitored proximal and distal to the branches to verify similar flow dynamics in each group. After 2 hours of simultaneous and equal flow in all branches the circulation was discontinued and the grafts were irrigated and sliced open to expose the inner surface. Digital images were taken in a standard technique coded for each graft for